

Quiz #1 – Analytic Geometry

Calculate the distance between the line and the point. Round your answer to one decimal place.

$$y = -x + 5, (-1, -2)$$

$$m_{\perp} = 1$$

$$y = x + b$$

sub $(-1, -2)$ to solve b

$$-2 = -1 + b$$

$$b = -2 + 1$$

$$b = -1$$

New equation: $y = x - 1$

$$\textcircled{1} y = -x + 5$$

$$\textcircled{2} y = x - 1$$

$$\frac{2y}{2} = \frac{4}{2}$$

$$y = 2$$

sub $y = 2$ into $\textcircled{1}$

$$y = -x + 5$$

$$2 = -x + 5$$

$$x = 5 - 2$$

$$x = 3$$

distance of a line $(3, 2)$ & $(-1, -2)$

$$d = \sqrt{(-1-3)^2 + (-2-2)^2}$$

$$= \sqrt{(-4)^2 + (-4)^2}$$

$$= \sqrt{16 + 16}$$

$$= \sqrt{32}$$

∴ the distance between the line and the point is $\sqrt{32}$